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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/788,263	02/16/2001	Jesus Al Ortiz	20843000200	4933

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EXAMINER

KENNY, STEPHEN

ART UNIT	PAPER NUMBER
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3726

DATE MAILED: 02/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/788,263	ORTIZ ET AL.	
	Examiner	Art Unit	
	Stephen J Kenny	3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 November 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13,15-23,59-61,63-65 and 67 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13,15-23,59-61,63-65 and 67 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Claim Objections

Claim 15 is objected to because of the following informalities: claim 15 is dependent on a canceled claim (claim 14). Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 59, 61, 63-65 are rejected under 35 U.S.C. 102(b) as being anticipated by McCoy, (US Patent No 5014160).

Regarding claim 59, McCoy discloses shielding an electronic component (15) on a printed circuit board (PCB) (14) comprising: attaching a base portion (20) of a metallized shield body to a ground trace (12) disposed on the PCB which surrounds the electric component (15); and removably coupling a top portion (30) of a metallized shield body to the base portion to enclose the electronic component (Figure 1).

Regarding claim 61, McCoy discloses the base portion (20) comprises a plurality of orthogonally extending walls (24) wherein removably coupling comprises overlapping a portion of the top portion over the plurality of walls of the base portion (Figure 3).

Regarding claim 63-65, McCoy discloses protrusions (36) between a periphery of the top & bottom portions of the shield; spaced less than half a wavelength apart; and a tab (36) and groove (26) closing feature (Figure 3).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 13, 15-17, & 21-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higgins III (US Patent No 5639989) in view of DiLeo (US Patent No 5968600).

Regarding claim 13, Higgins discloses a method of EMI shielding by encapsulating an electronic component (50) with a conforming insulating base coating (24) (column 6, lines 20-22); applying a first conductive layer (60) over the base coating (column 6, lines 64-66); grounding the conductive layer to a ground trace (56) to form an EMI shield for the electric component (column 7, lines 47-51).

Regarding claim 16, Higgins discloses the first conductive layer comprises copper (column 7, line 35 & line 40).

Regarding claim 17, Higgins discloses applying a second conductive layer (62) over the first conductive layer (column 9, lines 47-54).

Regarding claim 21, Higgins discloses positioning the ground trace (56) or "ring" around a periphery of the component (column 7, lines 47-51 & item 19 in Figure 2).

Regarding claim 22, Higgins discloses a plurality of components within the EMI shield (30, 50) (column 8, lines 35, 64).

Regarding claim 23, Higgins discloses exposing the ground trace through the insulating coating (column 6, lines 40-44).

Higgins does not explicitly disclose applying the conductive layer via vacuum metallizing, and maintaining the temperature of the component and base coating below 200°C.

DiLeo discloses applying an EMI coating via vacuum metallizing (column 1, line 27), as well as maintaining a temperature below 200°C (column 4, lines 36-40). Vacuum metallizing is a cost effective, environmentally desirable, and consistent technique for forming EMI shields as disclosed by DiLeo in column 1, line 26. Furthermore, a curing temperature below 200°C provides good adhesion without distorting the substrate, as disclosed by DiLeo in column 4, line 41. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form the EMI shield of Higgins via vacuum metallizing at a temperature below 200°C as taught by DiLeo in order to realize the advantages discussed above.

Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Higgins in view of DiLeo as applied to claims 13, 15-17, & 21 above, and further in view of Askew (US Patent No 6350951).

Higgins, as modified by DiLeo discloses the claimed invention except for explicitly stating that an insulating layer is applied over the first conductive layer.

Askew discloses applying an insulating layer over the first conductive layer of an EMI shield (column 3, lines 30-32). The use of such an insulating layer is advantageous in that it prevents damage to the underlying conductive layer which provides the electrical shielding of the working components. Therefore it would have been obvious to one of ordinary skill in the art at

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the time the invention was made to form a EMI shield as disclosed by Higgins/DiLeo while applying an insulation layer over the first conductive layer in order to realize this benefit. In regards to claim 19, Higgins discloses the use of a waterproof insulating layer (column 6, line 31, i.e. polyurethane is waterproof).

Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Higgins in view of DiLeo and further in view of Gabower (*Thermoformed Vacuum Metallized Inserts For EMI Shielding of Electronic Devices*, Consumer Electronics Show, Flamingo Hilton and Tower, Las Vegas, Nevada, pp. 151-158).

Higgins/DiLeo, as modified above, discloses the instant invention except for adhering the conductive & insulative layers via a glow discharge process.

Regarding claim 20, Gabower discloses employing a glow discharge operation (page 156, 1st paragraph) when forming an EMI shield. Glow discharging is a preferred method of joining conformal coatings of dissimilar materials. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form an EMI shield as disclosed by Higgins/DiLeo by using a glow discharge process as taught by Gabower in order to improve the adhesion of the insulator to the conductive layer.

Claims 60, & 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCoy in view of Mok et al. (US Patent No 5704117).

McCoy discloses the claimed invention except for the use of an adhesive, and thermoforming the shield out of plastic.

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Mok discloses applying an adhesive to bond the EMI cover to the ground trace (column 2, lines 50-52); and thermoforming the EMI shield from plastic (column 2, lines 8-10). The use of an adhesive provides a more secure connection between the EMI shield and ground trace, and thermoforming the shield is a cost effective means of manufacturing the shield. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to form an EMI shield as McCoy discloses, while applying an adhesive to the ground trace & thermoforming the shield as taught by Mok in order to realize these advantages.

Conclusion

The prior art made of record on the attached PTO-892, and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J Kenny whose telephone number is 703-306-0359. The examiner can normally be reached on mon - fri 9am - 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Derris Banks can be reached on 571-272-4431. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sk

S. Kenny



DAVID P. BRYANT
PRIMARY EXAMINER